

I CLAIM:

1. A method of identifying illegitimate interactions of a presumed user on a network, the method comprising:

5 collecting data from user interactions on a network, the data including aggregate measure data and unique feature data about the presumed user;

storing the data in a database;

building predictive models with the aggregate measure and unique feature data to identify illegitimate interactions with the network; and

10 identifying the illegitimate interactions in the database using the predictive models.

2. The method of claim 1 further including:

15 applying a mathematical model of interactions derived from at least one probabilistic approach;

applying a mathematical model of interactions based on at least one stochastic approach; and

determining the legitimacy of the interactions using the stochastic and probabilistic mathematical equations.

20 3. The method of claim 2 where the at least one probabilistic approach includes logistic regression.

4. The method of claim 2 where the at least one stochastic approach includes linear discriminant analysis.

5. The method of claim 2 further including:

25 assigning a classification to the value created by the probabilistic and stochastic derived mathematical models of interaction;

computing values of the probabilistic and stochastic derived mathematical models of interaction;

for the probabilistic mathematical models, placing an interaction into a class based on a computed probability of belonging to that class; and

for the stochastic mathematical models, placing an interaction into the class with the highest computed value.

6. The method of claim 5 further including:
    - periodically reassessing the probabilistic and stochastic mathematical models against a standard;
    - applying a retrospective validating process; and
    - applying a prospective validating process.
  7. The method of claim 1 further comprising:
    - evaluating multiple network interactions;
    - creating a classification table; and
    - determining a model of legitimate and illegitimate interactions from the classification table.
  8. The method of claim 1 further including:
    - creating a database of illegitimate interactions.
  9. The method of claim 8 further including:
    - evaluating the database to ensure that the probabilistic and stochastic derived mathematical models of interaction are reliable; and
    - discarding unreliable probabilistic and stochastic mathematical models of interaction.
  10. The method of claim 9 further including:
    - collecting additional aggregate measure and unique feature data; and
    - deriving new probabilistic and stochastic derived mathematical models of interaction based on existing collected data and the additional collected aggregate measure and unique feature data.
  11. The method of claim 1 where the collection of aggregate measure data comprises:

collecting data on a number of clicks per internet protocol address for a given time period;

collecting data on a number of unique queries per user session;

collecting data on a number of network clicks for a given time period; and

5 collecting data on a number of distinct referral partners who could access the network.

12. The method of claim 1 where the collection of unique feature data comprises:

10 collecting data on an origin of the presumed user;

collecting data on a time of the interactions;

collection data on a type of the interactions; and

collecting data on presumed measures of uniqueness of the presumed user.

15 13. A method for creating reports according to website interactions after determining the validity of the website interactions, the method comprising:

collecting aggregate measure data and unique feature data about the website interaction;

20 building predictive models with the aggregate measure and unique feature data to identify undesirable interactions with the website; and

removing the undesirable interactions from the reports, once identified.

14. The method of claim 13 further including:

25 applying statistical data analysis techniques to identify undesirable interactions with the website before removing the undesirable interactions from the reports.

15. The method of claim 14 wherein the statistical data analysis is used to create predictive models of undesirable interactions.

16. The method of claim 15 wherein the predictive models are used to produce at least one of a probability value and a behavior group.

17. The method of claim 16 further including:

5 formulating a business rule about which probability value or behavior group constitutes undesirable interactions with the Website.

18. The method of claim 15 further including:

creating a database of undesirable interactions.

19. The method of claim 18 further including:

10 evaluating the database to ensure that the predictive models are reliable; and

discarding unreliable predictive models.

20. The method of claim 19 further including:

15 collecting additional aggregate measure and unique feature data; and

deriving new predictive models based on existing collected data and the additional collected data.

21. The method of claim 13, wherein the predictive model is biased in favor of a customer.

20 22. A system for creating reports according to website interactions after determining the validity of the website interactions, the method comprising:

25 a first processor to collect aggregate measure data and unique feature data about a website user;

a second processor to create predictive models with the aggregate measure and unique feature data to identify undesirable interactions with the website, wherein the undesirable interactions are removed from the reports, once identified.

23. The system of claim 22 wherein statistical data analysis techniques are used to identify undesirable interactions with the website before removing the undesirable interactions from the reports.

5 24. The system of claim 23 wherein the statistical data analysis is used to create predictive models of undesirable interactions.

25. The system of claim 24 wherein the predictive models are used to produce at least one of a probability value and a behavior group.

10 26. The system of claim 25 wherein a business rule is formulated about which probability value or behavior group constitutes undesirable interactions with the Website.

27. The system of claim 24 wherein a database is created of undesirable interactions.

15 28. The system of claim 27 wherein the database is evaluated to ensure that the predictive models are reliable and unreliable predictive models are discarded.

29. The system of claim 28 wherein new data is collected and new predictive models are derived based on existing collected data and the new collected data.

20 30. The system of claim 22 wherein the predictive model is biased in favor of a customer.

31. A method of rating user interactions on a network, the method comprising:

25 collecting data from user interactions on a network, the data including aggregate measure data and unique feature data about the user;

storing the data in a database; and

building predictive models with the aggregate measure and unique feature data to rate the interactions with the network.

32. The method of claim 31 further including identifying illegitimate interactions on the network.

33. The method of claim 31 further including identifying invalid interactions on the network.

5 34. The method of claim 31 further including identifying unauthorized interactions on the network.

35. The method of claim 31 further including:  
applying a probabilistic approach to mathematical modeling of  
the interactions;

10 applying a stochastic approach to derive mathematical models  
of the interaction; and

identifying interactions on the network using the probabilistic and  
stochastic mathematical models of interaction.

36. The method of claim 35 further including:

15 assigning a class to values computed from the probabilistic and  
stochastic derived mathematical equations;

computing the values of the probabilistic and the stochastic  
mathematical models of interaction;

20 for the probabilistic mathematical models, placing an interaction  
into a class based on the computed probability of belonging to the class; and  
for the stochastic models, placing an interaction into the class  
with the highest computed value.

37. The method of claim 36 further including:

25 periodically reassessing the probabilistic and stochastic  
mathematical equations against a standard;

applying a retrospective validating process; and  
applying a prospective validating process.

38. The method of claim 37 further comprising:

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evaluating multiple network interactions;  
creating a classification table; and  
determining a model of interactions from the classification table.

39. The method of claim 35 further including:  
5 creating a database of interactions.

40. The method of claim 39 further including:  
evaluating the database to ensure that the probabilistic and the  
stochastic mathematical models of interaction are reliable; and  
discarding unreliable probabilistic and stochastic mathematical  
10 models of interaction.

41. The method of claim 40 further including:  
collecting additional aggregate measure and unique feature  
data; and  
deriving new probabilistic and stochastic mathematical models  
15 of interaction based on existing collected data and the additional collected  
data.

42. The method of claim 31 where the collection of aggregate  
measure data comprises:  
collecting data on a number of clicks per internet protocol  
20 address for a given time period;  
collecting data on a number of unique queries per user session;  
collecting data on a number of network clicks for a given time  
period; and  
collecting data on a number of distinct referral partners who  
25 could access the network.

43. The method of claim 31 where the collection of unique feature  
data comprises:  
collecting data on an origin of the user;  
collecting data on a time of the interactions;

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collection data on a type of the interactions; and  
collecting data on presumed measures of uniqueness of the  
user.

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